

CLAIM AMENDMENTS

Please amend claims 3-4, 8-9, 11, 16, 23 and 50 wherein underlining indicates additions and strikethrough and double brackets indicate deletions, and cancel claims 1-2, 5-6, 13-14, 19-21, 26-29, 31, 34-38, 40, 43-48 and 53-58 as follows. This listing of claims will replace all prior versions, and listings, of claims in the application.

1-2. (Cancelled)

3. (Currently Amended) A valve core according to claim 1, for opening and closing a core mounting throughbore, comprising:

a cylindrical core body fixed inside the throughbore and having a distal opening;

a moving shaft inserted through the core body so as to be directly moved and having an end;

a plug formed integrally at the end side of the moving shaft so as to open and close the distal opening of the core body;

a biasing member biasing the moving shaft so that the distal opening of the core body is closed by the plug;

a cylindrical sealing member;

an outer sealing portion formed integrally on the cylindrical sealing member and fitted with the outer periphery of the core body so as to be held between the core body and the inner wall of the throughbore thereby to adhere closely to the outer periphery of the core body; and

an inner sealing portion formed integrally on the cylindrical sealing member so as to adhere closely to an outer face of the plug, wherein the inner sealing portion includes including a cylindrical portion with a distal end and a cylinder side taper formed by gradually spreading a distal end side inner diameter of the cylindrical portion, and the plug includes a columnar portion fitted into the cylindrical portion of the inner sealing portion and a shaft side taper adhering closely to the cylinder side taper.

4. (Currently Amended) A valve core according to claim 2, for opening and closing a core mounting throughbore, comprising:

a cylindrical core body fixed inside the throughbore and having a distal opening;
a moving shaft inserted through the core body so as to be directly moved and having an end;

a plug formed integrally at the end side of the moving shaft so as to open and close the distal opening of the core body;

a biasing member biasing the moving shaft so that the distal opening of the core body is closed by the plug;

a cylindrical sealing member;

an outer sealing portion formed integrally on the cylindrical sealing member and fitted with the outer periphery of the core body so as to be held between the core body and the inner wall of the throughbore thereby to adhere closely to the outer periphery of the core body; and

an inner sealing portion formed integrally on the cylindrical sealing member so as to adhere closely to an outer face of the plug, the inner sealing portion protruding forward from an end of the core body and including , wherein the inner sealing portion includes a cylindrical portion with a distal end and a cylinder side taper formed by gradually spreading a distal end side inner diameter of the cylindrical portion, and the plug includes a columnar portion fitted into the cylindrical portion of the inner sealing portion and a shaft side taper adhering closely to the cylinder side taper.

5-6 (Cancelled)

7. (Original) A valve core according to claim 3, wherein the cylindrical sealing member is rotatably fitted within the core body.

8. (Currently Amended) A valve core according to claim 1, for opening and closing a core mounting throughbore, comprising:

a cylindrical core body fixed inside the throughbore and having a distal opening;
a moving shaft inserted through the core body so as to be directly moved and having an end;

a plug formed integrally at the end side of the moving shaft so as to open and close the distal opening of the core body;

a biasing member biasing the moving shaft so that the distal opening of the core body is closed by the plug;

a cylindrical sealing member;

an outer sealing portion formed integrally on the cylindrical sealing member and fitted with the outer periphery of the core body so as to be held between the core body and the inner wall of the throughbore thereby to adhere closely to the outer periphery of the core body; and

an inner sealing portion formed integrally on the cylindrical sealing member so as to adhere closely to an outer face of the plug, wherein the moving shaft and the core body include respective abutment positioning portions abutting each other while the plug is adherent to the inner sealing portion.

9. (Currently Amended) A valve core according to claim 2, wherein the moving shaft and the core body include respective abutment positioning portions abutting each other while the plug is adherent to the inner sealing portion 8, wherein the inner sealing portion protrudes forward from an end of the core body.

10. (Original) A valve core according to claim 3, wherein the moving shaft and the core body include respective abutment positioning portions abutting each other while the plug is adherent to the inner sealing portion.

11. (Currently Amended) A valve core according to claim 5, for opening and closing a core mounting throughbore, comprising:

a cylindrical core body fixed inside the throughbore and having a distal opening;

a moving shaft inserted through the core body so as to be directly moved and having an end;

a plug formed integrally at the end side of the moving shaft so as to open and close the distal opening of the core body;

a biasing member biasing the moving shaft so that the distal opening of the core body is closed by the plug;

a cylindrical sealing member rotatably fitted within the core body;

an outer sealing portion formed integrally on the cylindrical sealing member and fitted with the outer periphery of the core body so as to be held between the core body and the inner wall of the throughbore thereby to adhere closely to the outer periphery of the core body; and
an inner sealing portion formed integrally on the cylindrical sealing member so as to adhere closely to an outer face of the plug,

wherein the moving shaft and the core body include respective abutment positioning portions abutting each other while the plug is adherent to the inner sealing portion.

12. (Original) A valve core according to claim 8, wherein:

the moving shaft is made of a metal having a hardness differing from a hardness of a metal made into the core body;

the abutment positioning portion at the moving shaft side includes an abutting taper formed by tapering a part of the plug so that a diameter thereof is gradually reduced toward an inner side of the core body;

the abutment positioning portion at the core body side includes an abutting edge formed at an opening edge of the core body having a cylindrical structure; and

the abutting taper and the abutting edge provide a metal seal therebetween.

13-14. (Cancelled)

15. (Original) A valve core according to claim 3, wherein the core body has a body positioning abutment which is formed on an outer face thereof so as to extend sidewise relative to a portion of the core body with which the cylindrical sealing member is fitted, the body positioning abutment being butted against the inner wall of the throughbore in a direction of insertion into the throughbore.

16. (Currently Amended) A valve core ~~according to claim 5, for opening and closing a core mounting throughbore, comprising:~~

a cylindrical core body fixed inside the throughbore and having a distal opening;

a moving shaft inserted through the core body so as to be directly moved and having an end;

a plug formed integrally at the end side of the moving shaft so as to open and close the distal opening of the core body;

a biasing member biasing the moving shaft so that the distal opening of the core body is closed by the plug;

a cylindrical sealing member rotatably fitted within the core body;

an outer sealing portion formed integrally on the cylindrical sealing member and fitted with the outer periphery of the core body so as to be held between the core body and the inner wall of the throughbore thereby to adhere closely to the outer periphery of the core body; and

an inner sealing portion formed integrally on the cylindrical sealing member so as to adhere closely to an outer face of the plug,

wherein the core body has a body positioning abutment which is formed on an outer face thereof so as to extend sidewise relative to a portion of the core body with which the cylindrical sealing member is fitted, the body positioning abutment being butted against the inner wall of the throughbore in a direction of insertion into the throughbore.

17. (Original) A valve core according to claim 8, wherein the core body has a body positioning abutment which is formed on an outer face thereof so as to extend sidewise relative to a portion of the core body with which the cylindrical sealing member is fitted, the body positioning abutment being butted against the inner wall of the throughbore in a direction of insertion into the throughbore.

18. (Original) A valve core according to claim 12, wherein the core body has a body positioning abutment which is formed on an outer face thereof so as to extend sidewise relative to a portion of the core body with which the cylindrical sealing member is fitted, the body positioning abutment being butted against the inner wall of the throughbore in a direction of insertion into the throughbore.

19-21. (Cancelled)

22. (Original) A valve core according to claim 3, wherein the cylindrical sealing member includes a larger diameter portion and a smaller diameter portion both arranged axially, the core

body is fitted in the larger diameter portion, and the core body has an end face butted against a stepped portion between the larger and smaller diameter portions.

23. (Currently Amended) A valve core according to claim 5, wherein the cylindrical sealing member includes for opening and closing a core mounting throughbore, comprising:
a cylindrical core body fixed inside the throughbore and having a distal opening;
a moving shaft inserted through the core body so as to be directly moved and having an end;
a plug formed integrally at the end side of the moving shaft so as to open and close the distal opening of the core body;
a biasing member biasing the moving shaft so that the distal opening of the core body is closed by the plug;
a cylindrical sealing member rotatably fitted within the core body and including a larger diameter portion and a smaller diameter portion both arranged axially, the core body [[is]] being fitted in the larger diameter portion, and the core body [[has]] having an end face butted against a stepped portion between the larger and smaller diameter portions;
an outer sealing portion formed integrally on the cylindrical sealing member and fitted with the outer periphery of the core body so as to be held between the core body and the inner wall of the throughbore thereby to adhere closely to the outer periphery of the core body; and
an inner sealing portion formed integrally on the cylindrical sealing member so as to adhere closely to an outer face of the plug.

24. (Original) A valve core according to claim 8, wherein the cylindrical sealing member includes a larger diameter portion and a smaller diameter portion both arranged axially, the core body is fitted in the larger diameter portion, and the core body has an end face butted against a stepped portion between the larger and smaller diameter portions.

25. (Original) A valve core according to claim 12, wherein the cylindrical sealing member includes a larger diameter portion and a smaller diameter portion both arranged axially, the core body is fitted in the larger diameter portion, and the core body has an end face butted against a stepped portion between the larger and smaller diameter portions.

26 -29. (Cancelled)

30. (Original) A valve core according to claim 3, wherein the biasing member comprises a compression coil spring inserted into a portion of the moving shaft protruding outward from the core body so as to be compressed between a spring stopper formed integrally with the end of the moving shaft and the end of the core body.

31. (Cancelled)

32. (Original) A valve core according to claim 8, wherein the biasing member comprises a compression coil spring inserted into a portion of the moving shaft protruding outward from the core body so as to be compressed between a spring stopper formed integrally with the end of the moving shaft and the end of the core body.

33. (Original) A valve core according to claim 12, wherein the biasing member comprises a compression coil spring inserted into a portion of the moving shaft protruding outward from the core body so as to be compressed between a spring stopper formed integrally with the end of the moving shaft and the end of the core body.

34-38. (Cancelled)

39. (Original) A valve core according to claim 3, wherein the core body, the moving shaft, the cylindrical sealing member and an elastic member serving as the biasing member are formed into four discrete parts.

40. (Cancelled)

41. (Original) A valve core according to claim 8, wherein the core body, the moving shaft, the cylindrical sealing member and an elastic member serving as the biasing member are formed into four discrete parts.

42. (Original) A valve core according to claim 12, wherein the core body, the moving shaft, the cylindrical sealing member and an elastic member serving as the biasing member are formed into four discrete parts.

43-48. (Cancelled)

49. (Original) A valve core according to claim 3, wherein both the valve core and the plug have a pair of faces respectively formed parallel to each other, and the inner sealing member is disposed between said pair of faces.

50. (Currently Amended) A valve core according to claim 5, for opening and closing a core mounting throughbore, comprising:

a cylindrical core body fixed inside the throughbore and having a distal opening;

a moving shaft inserted through the core body so as to be directly moved and having an end;

a plug formed integrally at the end side of the moving shaft so as to open and close the distal opening of the core body;

a biasing member biasing the moving shaft so that the distal opening of the core body is closed by the plug;

a cylindrical sealing member;

an outer sealing portion formed integrally on the cylindrical sealing member and fitted with the outer periphery of the core body so as to be held between the core body and the inner wall of the throughbore thereby to adhere closely to the outer periphery of the core body; and

an inner sealing portion formed integrally on the cylindrical sealing member so as to adhere closely to an outer face of the plug, wherein both the valve core and the plug have a pair of faces respectively formed parallel to each other, and the inner sealing member is disposed between said pair of faces.

51. (Original) A valve core according to claim 8, wherein both the valve core and the plug have a pair of faces respectively formed parallel to each other, and the inner sealing member is disposed between said pair of faces.

52. (Original) A valve core according to claim 12, wherein both the valve core and the plug have a pair of faces respectively formed parallel to each other, and the inner sealing member is disposed between said pair of faces.

53-58. (Cancelled)